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UNIVERSITY

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OF

TORONTO

Faculty of Dentistry

Examinations

1958

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Anthropology

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1958

FIRST YEAR

ANTHROPOLOGY 1e

Examiner -- W. J. Mayer-Oakes

(No books or notes allowed)

Answer 1 and 2 and EITHER 3 or 4.

1. Discuss:

(a) The most significant characteristics which define MAN (the subject matter of anthropology), and,

(b) The various ways in which anthropologists study him.

2. The time dimension is very important to the anthropologist interested in man's development. A recent article in the Scientific American describes a new dating method which offers great promise.

"One of the most important products of the isotope thermometer is that it has given us a definite time scale, not only for the ice ages but also for the evolution of life. We can now date fossils with some confidence. In the past most of the human and manlike fossils have been dated, after a fashion, by the deposits in which they were found but the age of the deposits was often uncertain. With the fairly accurate new calendar of glaciation cycles obtained through Urey's thermometer, we can put the chronology of human evolution in order, for the migrations of early man and the rise of new types are often connected with glacial periods. We know, for example, that the man-apes of South Africa originated some time before the first glaciation and died out during the first interglacial period. According to the paleotemperature chronology, this means that they lived between about 400,000 and 200,000 years ago. Similarly we know that Pithecanthropus, Sinanthropus and Atlanthropus -- men of a very primitive type which I prefer to assign to the single species Homo erectus -- originated during the first interglacial, which we date at 200,000 to 250,000 years ago." (Dates established by this calendar are as follows: 1st glacial, 300,000 years ago; 2nd glacial, 200,000; 3rd glacial, 125,000; 4th glacial, 75,000.)

Describe the major steps of man's evolution, both:
(a) Biologically, and,
(b) Culturally.

Integrate this information with the time dimensions used in our course lectures and readings. Then, comment briefly on the significance of the new time scale indicated by the "isotope thermometer" method.

3. Using the concept of "community pattern" based on mobility and complexity, describe in detail two of the non-Western societies you have studied this year. Organize your description in terms of "cultural universals".

OR

4. Briefly define and illustrate each of the following:
   - Cultural relativism
   - Race
   - Generalized
   - Ethnocentrism
   - Technology
   - Adaptation
   - Social class
   - Cultural relativism
   - Folk-urban continuum
   - Mutation

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UNIVERSITY OF TORONTO
Faculty of Arts

Annual Examinations, 1958

FIRST YEAR

ART AND ARCHAEOLOGY 1a, 1b

FIVE questions constitute a full paper. Candidates must answer at least TWO questions from each part. 1a students must answer question 11 as one of their five.

PART A
Write in a separate book

1. Describe, with a plan, the Parthenon in Athens.

OR

Discuss the combination of the Doric and Ionic orders in single buildings in fifth-century Greek architecture. What was the origin of the Corinthian order, and in what ways were early Corinthian columns used?

2. Discuss the developments and achievements of architectural sculpture in Classical Greece.

OR

Write on the importance of FOUR of the following in the history of Greek sculpture:
The Artemesion Zeus; the Victory of Paionios; the Doryphoros; Pheidias; the metopes of the Parthenon.

3. Discuss fully TWO of the following:
The Colosseum; Roman Imperial bathing establishments; the use of vaults and domes in Roman architecture.

PART B
Write in a separate book.

4. Describe briefly the plan and elevation of St. Peter's Rome, and the uses to which the parts of the building were put. To what extent does this type of church influence the history of Medieval architecture?

5. Comment on the gilt book cover, a print of which is enclosed, as a typical monument of the Carolingian Renaissance.

6. Identify and discuss the technical and symbolical solutions illustrated by the east end of the church which is illustrated in the accompanying print.

7. Identify the sculpture illustrated in the accompanying print and explain why it is representative of Romanesque art.

8. Write short notes on the effect upon architecture of the Cistercian Reform and the Orders of Preaching Friars.

9. Discuss the role of the lay patron in Medieval art, citing examples.

10. Write short notes on TWO of the following:

    1. Church of the Holy Sepulchre, Jerusalem.
    2. Cathedral, Speyer.
    3. Sainte Chapelle, Paris.

11. (a) Date, describe and make a sketch-plan of the palace at Tiryns OR Pylos.

    OR

    Describe TWO representative examples of Cretan wall-painting.

    (b) Identify the manuscript and, with it as an example, discuss the fundamental changes in the concept of the illuminated book which it illustrates.

    OR

    Explain the role of light in Medieval painting.

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1958

FIRST YEAR

ENGLISH COMPOSITION

Examiners -- The Staff in English

The Minister of Education's recent announcement that commencing in September, 1958 the school year would be extended by one week throughout the Province of Ontario raises the question of whether the high school course is sufficiently difficult to provide an adequate preparation for university studies. You have now completed your freshman year at the University, and you are therefore in a position to comment on the adequacy of the preparation you received. Were you adequately prepared in all subjects? Were you adequately prepared for the methods of instruction adopted at the University? Were you prepared temperamentally for the responsibilities which a university expects a student to assume? Were you "guided" into the right course?

You are to write an essay on some aspect of this problem -- the preparation of students for university work. Set yourself a specific question (this will be the title of your essay) and present an argument which justifies an affirmative or negative answer to the question or which explains why a categorical "yes" or "no" answer cannot be given. Support your argument by evidence drawn from your own experience. Avoid easy and vague generalizations. The essay will be a successful argument if it convinces the reader that your point of view is justified.

If a number of years have intervened between your departure from high school and your entrance to the University, you may direct your attention to the particular problems which face students in this position. The essay will still take the form of an argument supporting an answer to a specific question.

The essay should extend to approximately 750 words. You have ample time to plan the essay in detail and to reread it carefully. Give special attention to paragraphing. A sound essay is a sequence of well-developed paragraphs.

English Literature

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1958

FIRST YEAR

ENGLISH LITERATURE

Examiners -- The Staff in English

Answer FOUR questions, ONE from Part A, TWO from Part B, and the single question in Part C. In selecting your questions, make sure that you do not discuss the same work in more than one answer. All questions are of equal value. It is strongly suggested that 30 minutes be devoted to the planning and the rereading of your answers.

Part A.

1. A novelist is able to interrupt his narrative in order to comment on the situation or the characters. Fielding does this frequently, Hardy occasionally, Forster rarely. Discuss the merits and the disadvantages of this practice. Refer to at least two novels.

2. Unlike the novelist, the dramatist cannot speak in his own person. However, he has other means of indicating how the action and the characters should be interpreted. Identify two different methods by which the dramatist can control the reactions of his audience. Refer to at least two plays.

3. Using Tess of the D'Urbervilles as an example, explain briefly what a novel is. Then answer the question, Is Gulliver's Travels a novel?

Part B.

4. Gulliver's Travels is divided into four books, each of the novels into a certain number of parts, phases, or sections, and each of the plays into a certain number of acts or scenes. Explain why one of the authors subdivided his work as he did.

5. In his opening scene, the dramatist normally introduces the moral problem with which his play is concerned. Discuss the opening scene of one of the four plays, showing what the problem is and how it is introduced.

6. The closing section of a novel normally represents a solution to a problem. In the light of this statement, can Tess of the D'Urbervilles, or Joseph Andrews or A Passage to India be considered a "normal" novel. Discuss one work only.

7. Are we justified in calling Gulliver's Travels a unified work of art or is it a collection of four separate books?

Part C.

8. (a) In one paragraph explain why one of the following poems was singled out for special attention in this course: "Prothalamion," "To His Coy Mistress," "The Rape of the Lock."

(b) Discuss the appropriateness of one of the following statements, taking care to explain clearly what you mean by the underlined adjective:

"Love Among the Ruins" is a lyric poem.
"The Bishop Orders His Tomb at St. Praxed's Church" is a moral poem.
"Lines Composed a Few Miles Above Tintern Abbey" is a philosophic poem.
"I Wandered Lonely as a Cloud" is a Wordsworthian poem.
"The Dry Salvages" is a difficult poem.
"The Dry Salvages" is a Christian poem.

Trench 1a

UNIVERSITY OF TORONTO
FACULTY OF ARTS

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ANNUAL EXAMINATIONS, 1958

First Year

FRENCH 1a

PART A
(*Write in a separate book*)

Marks

30 1. Translate into French:

John had been waiting for this opportunity for a long time. He hastily packed his suitcase, sent for a cab, and headed for the station. He arrived in Alsheim on the stroke of twelve.

When John entered his father's office, the latter was reading his mail. "How happy I am that you have come," said the wealthy manufacturer. "I hope you will express your thoughts very frankly. First of all let's settle this question of your future once and for all. I should like you to be a magistrate or an official. I doubt that you could make a better choice. Which of the two careers would you prefer?"

The young lawyer was too surprised to answer. He was about to say he had not expected such a question when Lucienne opened the door. She ran to him and said gaily, "What a surprise! Do tell us about your stay in Germany and about your life at the barracks. But what's the matter? Why do you look so pale? Is it because you heard that I intend to marry a Prussian officer? I am sure that, when I introduce him to you, you will find him charming."

10 2. Translate into English:

Je regardais mon vieux commandant; il marchait à grands pas, avec une vigueur toujours soutenue, tandis que son mulet n'en pouvait plus et que mon cheval même commençait à baisser la tête. Ce brave homme ôtait de temps à autre son shako pour essuyer son front chauve, ou ses gros sourcils, ou ses moustaches blanches, d'où tombait la pluie. Il ne s'inquiétait pas de l'effet qu'avait pu faire sur moi son récit. Il ne s'était fait ni meilleur ni plus mauvais qu'il n'était. Il ne pensait pas à lui-même et, au bout d'un quart d'heure, il entama, sur le même ton, une histoire bien plus longue sur une campagne du maréchal Masséna, où il avait formé son bataillon en carré contre je ne sais quelle cavalerie. Je ne l'écoutai pas, quoiqu'il s'échauffât pour me démontrer la supériorité du fantassin sur le cavalier.

Part B

(*Write in a separate book*)

15 3. Although *Le Malade Imaginaire* is a delightful example of comic theatre, the scales might easily have been tipped toward tragedy. DISCUSS

OR

In the seventeenth century, comedy is essentially based on an abandonment of common sense by some of the characters. Discuss in relation to *Le Malade Imaginaire.*

7 4. (*a*) Translate into English:

Il rencontra en marchant un ermite, dont la barbe blanche et vénérable lui descendait jusqu'à la ceinture. Il tenait en main un livre qu'il lisait attentivement. Zadig s'arrêta, et lui fit une profonde inclination. L'ermite le salua d'un air si noble et si doux que Zadig eut la curiosité de l'entretenir. Il lui demanda quel livre il lisait.—C'est le livre des destinées, dit l'ermite; voulez-vous en lire quelque chose?

1 (*b*) What did Zadig read in the book?

7 (*c*) Discuss the significance of the chapter of *Zadig* from which the above passage is taken.

5 5. (*a*) Translate into English:

La partie du moulin qui trempait ainsi dans la Morelle, avait l'air d'une arche barbare, échouée là. Une bonne moitié du logis était bâtie sur des pieux. L'eau entrait sous le plancher, il y avait des trous, bien connus dans le pays pour les anguilles et les écrevisses énormes qu'on y prenait.

5 (*b*) How might the mill in Zola's *L'Attaque du Moulin* be considered a symbol?

5 (*c*) Briefly discuss Maupassant's treatment of the theme of war in contrast to *L'Attaque du Moulin.*

15 6. Examining the poems *Moïse* and *l'Albatros*, discuss the position of the artist in society as seen by Vigny and Baudelaire.

OR

Discuss the romantic handling of biblical themes by Victor Hugo.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

PREPROFESSIONAL YEAR

CHEMISTRY 108
General Chemistry

Examiner -- J. A. Page

Logarithm cards to be supplied; slide rules permitted.
The examination is 150 minutes long, there are 150 marks.

Marks

30 1. (a) Discuss the important aspects of covalent and ionic bonding, and make a general comparison of the properties of compounds in which the bonding is predominantly covalent with the properties of compounds in which the bonding is predominantly ionic.

(b) Write formulae to show the arrangement of the bonding electrons and the nature of the bonding in each of:

chlorine, ammonia, calcium chloride and ammonium chloride.

(c) For each of the following isotopes, state the number of protons and neutrons in the nucleus, and write out a description of the arrangement of the extranuclear electrons in terms of energy levels and sublevels:

Nitrogen	Mass Number 14	Atomic Number 7
Scandium	Mass Number 45	Atomic Number 21

(d) Briefly account for each of the following:

(i) Elements in the same family in the periodic table exhibit similar properties.

(ii) Helium, atomic number 2, and Neon, atomic number 10 are both chemically inert.

16 2. List the postulates of the kinetic molecular theory of gases, and show how these postulates are in accord with the experimental law of Charles ($P \alpha T(^{\circ}A)$; m,V constant).

24 3. With the aid of examples wherever possible, make clear the distinction between the members of each of the following pairs:

(a) Solutions and Mixtures,
(b) Mass Number and Atomic Weight,
(c) Weak Electrolyte and Strong Electrolyte,
(d) Acids and Bases.

20 4. A chemist prepared a pure compound which on analysis was found to contain only hydrogen, carbon and oxygen.

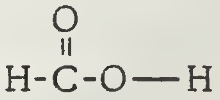
(a) On combustion in an excess of oxygen, 1.00 gram of the compound produced 0.60 grams of water and 1.47 grams of carbon dioxide. From this analytical data calculate the simplest formula of the compound.

(b) The compound was found to behave as a non-electrolyte when dissolved in water, and 1.00 gram of the compound when dissolved in 500 grams of water produced a solution with an incipient freezing point temperature of $-0.020^{\circ}C$ at one atmosphere pressure. From this data, and the simplest formula found in (a), calculate the exact molecular weight of the compound.

(c) What is the molecular formula of the compound?

20 5. A solution was prepared by dissolving 3.40 grams of the sodium salt of formic acid in enough water to give 500 ml. of solution.

Formic acid is a weak monoprotic acid, formula



$H-\overset{\overset{\displaystyle O}{\|}}{C}-O-H$

The temperature of the solution was $25^{\circ}C$, and the pH of the solution was found to be 8.38.

(a) What is the concentration of dissolved sodium formate in the solution (moles per litre)?

(b) What is the concentration of hydrogen ion in the solution (moles per litre)?

(c) What is the concentration of hydroxide ion in the solution (moles per litre)?

(d) Write a balanced equation(s) for the hydrolysis reaction(s) that are responsible for the basicity of the solution.

(e) Calculate the extent of the hydrolysis of the formate ion in this solution (fraction or per cent).

(f) Calculate the numerical value of the ionization constant for formic acid (K_a) from the data.

20 6. In a reaction vessel of 2.24 litres volume, 1.000 moles of nitrogen and 1.000 moles of hydrogen were mixed. No other sub-

stances were initially present. The reaction vessel was heated to 546°C and was maintained at that temperature until equilibrium was established with respect to the reaction:

$$N_2 + 3H_2 \rightleftharpoons 2NH_3 + \text{Heat}$$

The equilibrium pressure in the reaction vessel at 546°C was 54.0 atmospheres.

(a) Calculate the number of moles of each of nitrogen, hydrogen and ammonia present in the reaction vessel at equilibrium at 546°C.

(b) If the experiment was repeated at 1000°C, with the same initial quantities of nitrogen and hydrogen in the same reaction vessel, what factors would have to be considered in predicting the yield of ammonia? In what way would each of these factors affect the yield of ammonia? Explain briefly.

(c) If the experiment was again repeated at 546°C, with the same initial quantities of nitrogen and hydrogen and in addition one mole of the inert gas helium in the same reaction vessel, how would the yield of ammonia compare (qualitatively) with that calculated in (a) at 546°C? Explain briefly.

21 7. Given the following tabulation of oxidation-reduction couples:

Weak Reducing Ability Strong ↓

Strong Oxidizing Ability Weak ↑

$2Br^- \rightleftharpoons Br_2 + 2e$		E^o	+1.06v
$2H_2O \rightleftharpoons O_2 + 4H^+ + 4e$	(Water)	E	+0.82v
$Cu \rightleftharpoons Cu^{++} + 2e$		E^o	+0.34v
$H_2 \rightleftharpoons 2H^+ + 2e$		E^o	0.00v
$Cd \rightleftharpoons Cd^{++} + 2e$		E^o	-0.40v
$H_2 \rightleftharpoons 2H^+ + 2e$	(water)	E	-0.41v
$Na \rightleftharpoons Na^+ + e$		E^o	-2.71v

(a) For the cell:

Cd | 1 M $CdCl_2$ ¦ 1 M $CuSO_4$ | Cu

predict the cell voltage and the positive electrode, and write a balanced equation for the cell reaction.

(b) The cell:

$$\ominus\ \mathrm{Ni}\ \Big|\ 1\ \mathrm{M\ NiCl_2}\ \vdots\ 1\ \mathrm{M\ CuSO_4}\ \Big|\ \mathrm{CU}\oplus$$

develops a potential of 0.61 volts. The copper is the positive electrode of the cell. Calculate the standard potential (E^o) of the couple $Ni \rightleftharpoons Ni^{++} + 2e$.

(c) A 1 Molar aqueous solution of sodium bromide was electrolyzed using platinum electrodes and a small current. Write balanced equations for the reaction at (i) the anode and (ii) the cathode.

(d) A 1 Molar aqueous solution of cupric bromide was electrolyzed using copper electrodes and a small current. Write balanced equations for the reaction at (i) the anode and (ii) the cathode.

(e) What is the oxidation number of each element in the following compounds:

Br_2, $KMnO_4$, NH_3.

(f) Balance the following equation for the exidation reduction reaction between ferrous iron and permanganate in acid solution.

$$Fe^{++} + MnO_4^- + H^+ \longrightarrow Fe^{+++} + Mn^{++} + H_2O$$

Atomic Weights

H 1.00 C 12.00 Na 23.00

Molal depression of the Freezing Point for Water (ΔTf.p.) 1.86°C

K_w for water, 25°C, 1.00×10^{-14}

R Ideal Gas Law Constant

0.0821 litre atmosphere per °A per mole.

Mathematics

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY
ANNUAL EXAMINATIONS, 1958

Preprofessional Year

MATHEMATICS

NOTE.—Candidates are asked to do any FIVE questions.

1. (*a*) State and prove Rolle's theorem.

(*b*) Prove that $\lim\limits_{x\to 0} \dfrac{\sin x}{x} = 1$ without using l'Hospital's rule.

2. (*a*) State L'Hospital's rule.

(*b*) Using (2*a*), or in any other way, find the following limits:

$$\lim_{x\to 1} \frac{\log x}{x-1}, \quad \lim_{x\to 0} \frac{\tan x - x}{x - \sin x}, \quad \lim_{x\to\infty} \frac{x^{10}}{e^x}.$$

3. Find the derivatives of the following functions:

(*a*) $\tan^2(\pi x^3)$, (*b*) $e^x \cos(1-\log x)$ (*c*) $\dfrac{\sin(\cos x)}{\tan x}$

(*d*) $x^m \log \sin x$ (*e*) $\dfrac{4}{x} \sin\left(\dfrac{x^2}{8}\right) - \cos(e^{e^x})$

4. (*a*) Find the greatest and least values of the function $x - \frac{1}{3}x^3$ for $0 \leqslant x \leqslant 1$.

(*b*) A wire 8 feet long is to be cut into 2 pieces out of which a square and a circle are to be constructed. Find the lengths of wire for the square and circle in order that the total area of the two figures be a maximum.

5. (*a*) Show that if a function $f(x)$ can be expanded as a power series in $(x - a)$ then the coefficient of $(x - a)^m$ in the expansion is $\dfrac{f^{(m)}(a)}{m!}$.

(*b*) What do we mean by the remainder R_m in Taylor's formula? Using the extended mean value theorem, develop Lograng's formula for the remainder R_m in Taylor's series.

6. (*a*) What is the geometrical meaning of "The integral from *a* to *b* of the function $f(x)$"?

(*b*) State and prove the formula for integration by parts.

(*c*) Using an integral, find the area of the ellipse $\dfrac{x^2}{a^2} + \dfrac{y^2}{b^2} = 1$.

7. Find the following integrals:

(*a*) $\int_0^{\pi/2} \sin^3 x \, d\,x$, (*b*) $\int_0^{\pi} x^2 \cos^2 x \, d\,x$, (*c*) $\int_0^1 x\sqrt{1-x^2}\, d\,x$

8. (*a*) By making the substitution $\tan\left(\frac{x}{2}\right) = u$, find $\int \sec x \, d\,x$

(*b*) Solve the differential equation

$$\frac{dy}{\sec x} = \frac{dx}{\operatorname{cosec} x \,.\, \sqrt{1-y^2}}$$

9. (*a*) Show that if $\frac{dy}{dx} = f\left(\frac{y}{x}\right)$, then $\log x = \int \frac{du}{f(u)-u}$ where $u = \frac{y}{x}$.

(*b*) Using (9*a*), solve the equation $\frac{dy}{dx} = \left(\frac{y}{x}\right)^2$.

Physics

UNIVERSITY OF TORONTO
Faculty of Dentistry, Preprofessional Year
Faculty of Forestry, First Year

ANNUAL EXAMINATIONS, 1958

PHYSICS

Examiner -- J. C. Stryland

Candidates may use Clark's Tables and slide rules. Answers should be concise and clear.

1. (a) What focal length should a projector lens have in order to produce a twenty times enlarged image of a slide on a screen, 5 meter away from the lens?

(b) A heating element must be made of a certain kind of wire which has a resistance of 2 ohm per meter length. When connected to the 110 volt supply, the element should generate 200 calories per second. What length of wire should be used?

(c) An oscillating circuit produces electromagnetic waves of 500 meter wavelength. Calculate the capacitance of the circuit when its inductance is given to be 0. 04 microfarad.

(d) Between the horizontal plates of a condenser, 2 cm apart, is brought a small oil drop of 10^{-4} cm diameter. This drop has a negative charge equal to three times the charge of the electron. The density of the oil is 0. 8 gram per cm^3. Calculate the potential difference between the condenser plates for which the oil droplet will neither rise nor fall.

2. Mention briefly one achievement (e. g. a law, a theory or an experiment) in connection with EACH of the following physicists:

(a) Einstein
(b) Hertz
(c) Millikan
(d) Rutherford
(e) Van der Waals

3. (a) State the quantum hypothesis which Bohr introduced in order to explain the hydrogen line spectrum.

(b) What is the difference between an excited atom and an ionized atom?

(c) What is the difference between the atomic process leading to light-emission and the process responsible for the emission of x-rays?

(d) Why can hydrogen or helium atoms not emit x-rays?

(e) State briefly the analogy and the difference between light diffraction and x-ray diffraction.

4. Describe (for each case in not more than a few lines) an experiment or observation which demonstrates:

(a) Lenz's law (regarding interaction of two magnetic fields)

(b) Wien's displacement law (regarding the energy emitted by a hot solid)

(c) the photoelectric effect

(d) the wave character of moving electrons

(e) the energy equivalence of mass

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

PREPROFESSIONAL YEAR

ZOOLOGY

Parts A and B to be written in separate books

Part A

1. (a) List the functions of a respiratory system.

(b) How are these functions carried out in Protozoa, Annelids, Insects and Amphibians. Discuss in separate paragraphs and use diagrams to illustrate your answer.

(c) Write a brief note on the lateral line system and its enervation in a fish.

2. (a) Why are Tunicates considered to be chordate animals?

(b) By means of labelled diagrams compare the axial skeleton in Amphioxus, elasmobranch fish and bony vertebrates. Include a brief description of changes in the skull.

3. (a) Discuss digestion and absorption in the small intestine of a mammal. Use diagrams freely.

(b) Define or explain what is meant by meiosis, gamete, segregation, independent assortment, sex linkage, tetrad, chromatid, trihybrid cross, gastrula, archenteron.

Part B

4. Discuss the ontogenetic changes in the heart and aortic arches in Skate or Dogfish, amphibian and mammal. Illustrate with diagrams.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FIRST DENTAL YEAR

COMPARATIVE DENTAL ANATOMY

Examiner -- C. S. Churcher

Answer question number ONE and THREE other questions only. Wherever possible, diagrams should be used to illustrate your answers.

1. Define and distinguish sufficiently to show your understanding of the following terms:
polyphyodonty, acrodont, thecodont, haplodont, anchylosed, marsupial, carnassial, Triconodonta, lophoselenodont.

2. Write short notes on FOUR of the following only:
   (a) teeth in cyclostomes,
   (b) teeth in Cetacea,
   (c) characteristics of an omnivorous dentition,
   (d) teeth in Reptilia,
   (e) absence of teeth in Aves.

3. Describe the development of the placoid scale. How does this type of scale differ from that of the reptile?

4. Discuss the Cope-Osborn theory of the development of the mammalian dentition.

5. Give an account of the adaptations that have made EITHER the Carnivora OR the Proboscidea successful orders.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FIRST DENTAL YEAR

GROSS ANATOMY

Examiners -- Professor Duckworth and Staff in Anatomy

Write legibly. Diagrams may be used to illustrate answers. Questions are of equal value.

1. Give an account of the palate under the following headings:
    (1) Structure
    (2) Contents
    (3) Nerve Supply
    (4) Blood supply
    (5) Embryological development

2. Write concise notes on:
    (1) The cavernous sinus
    (2) The intrinsic muscles of the larynx
    (3) The lymphatic drainage of the tongue
    (4) The architecture of the jaw joint.

3. Describe carefully the process of swallowing fluids, noting muscles involved and their nerve supply.

4. Write accounts of:

(a) The facial nerve under the headings: superficial origin from brain, point of piercing dura, branches and distribution.

(b) The (internal) maxillary artery under the headings: origin, course, branches.

5. Discuss carefully:

(a) The mechanism of respiration.

(b) The coronary circulation, noting the anatomical factors involved in the circulation of blood through these vessels.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FIRST DENTAL YEAR

MICROSCOPIC ANATOMY

Use separate examination books for Parts A and B.

Marks

PART A

30 1. Describe the steps which occur during endochondral bone formation. Compare this process with that occurring in intramembranous ossification.

20 2. Using a drawing in each case to illustrate, compare the normal microscopic appearance of the thyroid gland with that of a gland which has been acted upon by anterior pituitary thyroid stimulating hormone.

10 3. Describe in detail the microscopic structure of the epidermis of thick skin. Use drawings to illustrate.

PART B

20 1. Define, and state the role played by each of the following epithelial-derived structures, in either tooth development or tooth function.

Epithelial attachment. Epithelial cell rests of Malassez.
Hertwig's epithelial root sheath. Dental lamina.
Reduced enamel epithelium.

20 2. Describe the microscopic structure of tooth enamel as seen in a ground section of a tooth, and give a brief account of how enamel is formed.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FIRST DENTAL YEAR

ORAL ANATOMY

All questions of equal value.

1. Draw the occlusal surface of the upper right first permanent molar. Label the cusps, ridges, grooves, and fossae. Drawings are to be made approximately three times the normal size. The normal bucco-lingual diameter is 11 mms. and the mesio-distal diameter is 10 mms.

2. With the aid of a series of drawings, describe the changes which normally occur in the pulp chamber and root canals of a lower first permanent molar as an individual ages from seven years to forty years.

3. (a) An eleven-year-old child has a large cavity on the distal surface of $/\overline{e}$. Under varying circumstances you may decide to fill the tooth, extract it, or leave it alone until the normal resorption of the roots causes it to be shed. What variables would influence your decision? How would you investigate these variations? Which of the three decisions would you make in each instance?

(b) You are making a visual examination of the oral cavity of a normal child, nine years of age. Which teeth would be visible?

4. An eight-year-old child had lost the lower left second primary molar and a space maintainer was not constructed. By eleven years of age the lower first permanent molar had drifted.

(i) In what direction did it move?

(ii) Why did it move in that direction?

(iii) What histological evidence of tooth movement would be seen in the periodontal membrane and alveolar bone which support $/\overline{6}$?

(iv) What influence would the drifting of $/\overline{6}$ exert on $/\overline{5}$ and $/\underline{5}$?

5. Describe in detail how the maxillary primary teeth contact the mandibular primary teeth in centric occlusion. Use drawings to illustrate your answer.

Organic Chemistry

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FIRST DENTAL YEAR

CHEMISTRY 216
Organic Chemistry

Examiner -- J. J. Rae

No aids permitted.

1. (a) What are the structural differences among cyanides, amides and diazo compounds. Give examples to illustrate your answer.

(b) Show by means of equations the reactions you would expect these three classes of compounds to undergo on hydrolysis.

2. Write brief essays on ANY TWO of the following topics:
   (i) Baeyer's strain theory,
   (ii) Petroleum,
   (iii) Heterocyclic compounds.

3. (a) Show by means of a chart or a series of equations the synthetic usefulness of (i) Grignard reagents AND (ii) aromatic aldehydes.

(b) Write the formula for butesin (n-butyl p-amino benzoate).

4. (a) Write a structural formula for EACH of the following:
   (i) novocaine,
   (ii) citric acid,
   (iii) pyridine,
   (iv) acetanilide,
   (v) glucose.

(b) Show by a series of equations how malonic acid may be synthesized from ethanol and benzoin may be synthesized from benzene.

5. Define and give examples (formulas or equations) for EACH of the following:

(i) saponification,
(ii) functional isomerism,
(iii) thermosetting plastic,
(iv) Sandmeyer reaction,
(v) acylation,
(vi) Griess reaction.

6. Describe reactions that could be used to distinguish between the members of the following pairs of substances. Name the products formed in each case and write the equations.

(i) ethyl chloride and ethanoyl chloride,
(ii) benzene and cyclohexane,
(iii) phenols and alcohols.

7. Define and give the name and formula for an example of:

(i) ureide,
(ii) dye,
(iii) quinone,
(iv) alkaloid.

Bacteriology.

UNIVERSITY OF TORONTO
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SECOND DENTAL YEAR

BACTERIOLOGY

1. (a) Describe briefly the pharmacological action of five bacterial exotoxins.
(b) Where and under what conditions are these toxins produced by the particular organisms?

2. List the various steps of the procedure to investigate a sputum sample for the presence of M. Tuberculosis.

3. What is the mechanism of the recurrence of fever in Borrelia recurrentis infections?

4. What is the function of various Clostridia in gas gangrene?

5. What is the procedure to test water for faecal pollution?

6. What is the procedure to isolate and identify mumps virus?

7. In the direct smear from a sample of pus from an abscess of long standing in the molar region of the mandible, gram positive cocci, gram negative rods and gram positive rod-like organisms are seen.
List the steps of the procedure to identify these organisms with the purpose of establishing the two possible causative organisms.

8. Discuss briefly the relationship of the three factors, host, organisms and drugs when antimicrobial agents are used in vivo.

9. Describe concisely how to isolate and identify the following organisms from samples of saliva or from debris from the gingival crevice. (Use differential media if possible.)

C. Hoffmanni
Candida albicans
Yeast
Lactobacilli
Treponema microdentium

10. Describe briefly the early and late pathological conditions which can be the consequence of streptococcal infections of the throat in children.

11. Answer briefly any THREE of the following questions.
   (a) What is the T. P. I. test?
   (b) What is serum sickness?
   (c) What is the principle of a Wasserman test?
   (d) What is anaphylaxis?
   (e) What is the tuberculin test?
   (f) Why are anaerobic organisms killed when exposed to oxygen?

UNIVERSITY OF TORONTO
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SECOND DENTAL YEAR

PHARMACOLOGY

Write plainly. Up to 5 marks will be added for neatness, legibility, and concise answers.

Marks

16 1. Name three important analgesic drugs employed in Dentistry, discussing their pharmacology.

16 2. Name five important properties in drugs which may be employed in the treatment of wounds. Give examples to illustrate, and explain the action of two of the drugs.

14 3. Briefly compare procaine with xylocaine, pointing out any advantages of the former as a local anaesthetic.

12 4. Write brief notes on the pharmacology of Amphetamine, Nikethamide, Silver Nitrate, Hyoscine.

12 5. Compare ether and nitrous oxide as general anaesthetics in Dentistry, alone or combined.

16 6. Differentiate between the hypnotic and sedative action of drugs. Give an example of each class.

9 7. Give mode of administration, common dosage forms, and synonyms for Acetylsalicylic Acid, Leptazol, Pentabarbitone.

Physiology

UNIVERSITY OF TORONTO
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SECOND DENTAL YEAR

PHYSIOLOGY

Answer ONLY FIVE of the eight questions.
All the questions are of equal value.

1. (a) Give a scheme to show the substances and the processes that are involved in the clotting of blood.

(b) Describe at least TWO conditions in man that cause bleeding tendencies, and explain the nature of the deficiencies.

2. (a) Show, by means of a table or diagram, the operation of the forces that are involved in the transfer of fluid between the blood plasma and the tissues.

(b) Describe at least FIVE conditions that result in an increase in the rate of formation of lymph, and explain the alterations that cause these increases.

3. Discuss briefly:

(a) Pressures in the intrathoracic (or intrapleural) space, and their influences on body processes.

(b) The Hering-Breuer reflex.

(c) Cyanosis.

4. Discuss the relations of mastication to secretion of glands and to digestion, with explanations of the modes of stimulation of the secretions.

5. (a) Describe and explain at least SIX properties of reflex activity.

(b) Describe important functional activities of the central nervous system that are revealed by studies on spinal reflexes.

6. (a) Describe the means whereby the kidney conserves base in the body, and the sites where these processes occur.

(b) Describe the operation of the processes in man that may be involved in causing the excretion of a large volume of urine after imbibing a large volume of water.

7. Describe effects of the administration of extract of the parathyroid glands in normal and in parathyroidectomized animals, and explain how these effects are produced.

8. (a) Describe changes in the adrenal cortex that are associated with increased secretory activity of the gland.

(b) Describe experimental and natural conditions that may elicit increased secretion of the adrenal cortex. Explain modes of stimulation of the gland.

UNIVERSITY OF TORONTO
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THIRD DENTAL YEAR

ANAESTHESIA

1. Discuss the techniques employed for local anaesthesia where the following teeth are to be removed:
    - (a) upper first molar
    - (b) lower third molar
    - (c) upper six anteriors

2. In respect to anaesthesia discuss the following conditions:
    - (a) Hyperthyroidism
    - (b) Hypertension
    - (c) A cardiac condition which is well compensated
    - (d) A cardiac condition which is not well compensated

3. What emergency measures would you institute for the following reactions to a local anaesthetic:
    - (a) Toxic overdose
    - (b) Syncope
    - (c) Allergy

4. What are the signs of hypoxia during general anaesthesia and why is it so important to watch for this complication?

Nutrition & Preventive Dentistry

UNIVERSITY OF TORONTO
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THIRD DENTAL YEAR

NUTRITION and PREVENTIVE DENTISTRY

(Answer Parts A and B in separate books)

All questions of equal value.

PART A

1. (a) List Canada's Food Rules.
   (b) What food groups are excellent sources of -
      (1) Thiamin
      (2) Riboflavin
      (3) Vitamin C
      (4) Vitamin A
      (5) Calcium

2. List the factors influencing the rate of metabolism of the body. How is the basal metabolism determined?

3. Describe three methods of diet analysis in common use. Which would you prefer to use in patient counselling? Why?

PART B

(To be answered in a separate book)

4. (a) List the major organic constituents of human tooth enamel.
   (b) List the major inorganic constituents of human tooth enamel.
   (c) List the major characteristics of the crystal lattice structure of the inorganic phase of mineralized tissues.

5. Describe briefly one experiment to support each of the following statements:

(a) The organic matrix of dentin is the most stable structure in the human body.

(b) The presence of bacteria is a primary factor in the etiology of dental caries.

(c) The chemical composition of the inorganic components of teeth may be altered by nutritional means.

6. Briefly discuss fluoridation under the following headings:

(a) Metabolism of fluorides with emphasis on excretion and storage.

(b) Dental benefits.

1960

General Pathology

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1958

THIRD DENTAL YEAR

GENERAL PATHOLOGY

All questions of equal value Time: 2 hours

1. (a) List the 5 principal characteristics of acute inflammation (i.e., cardinal signs of inflammation).
   (b) Give the basic mechanism responsible for each of the above.
   (c) What is exudate?
   (d) What are the principal functions of exudate?

2. Describe briefly the healing of an aseptic incision of the face through skin, subcutaneous tissue and muscle, down to and into periosteum of the mandible.

3. Define the following:-

   (1) foreign body reaction.
   (2) necrosis.
   (3) cloudy swelling or albuminous degeneration.
   (4) fatty metamorphosis.
   (5) gangrene.

4. Describe briefly the changes in skin that may result from radiation injury.

5. (a) Define precancerous lesion.
   (b) List 3 examples of precancerous lesions.

6. (a) List, in order of importance, the site of the lesions of acute rheumatic fever in the heart.
   (b) List in terms of functional effects, the end result of the various lesions given in (a).

7. (a) What bacteria may cause subacute bacterial endocarditis?
   (b) List the complications, or sequelae, of this infection in the following:-

   (i) heart
   (ii) spleen
   (iii) bone marrow
   (iv) kidneys.

8. (a) Define peptic ulcer and describe briefly the histologic appearance.
   (b) List 3 complications of peptic ulcer.

9. Describe briefly the principal pathological lesions which may be found in diabetes mellitus.

10. (a) Define leukemia.
    (b) What may be the presenting signs or symptoms in the patient?

11. (a) What is acute purulent meningitis?
    (b) Give briefly the pathogenesis of this infection.

12. (a) List those diseases in which purpura may be a symptom.
    (b) Give a simple classification of the hemorrhagic diseases.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1958

THIRD DENTAL YEAR

ORAL PATHOLOGY

NO PAPER AVAILABLE

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

THIRD DENTAL YEAR

SURGERY

1. Describe acute haematogenous osteomyelitis under the following headings:
   - (a) Etiology
   - (b) Pathology
   - (c) Clinical features

2. (a) Describe the clinical features of a carcinoma of the lip.
   (b) Describe the modes of spread of a malignant tumour.

3. Describe obstruction of the sub-mandibular salivary duct under the following headings:
   - (a) Etiology
   - (b) Clinical features
   - (c) Differential diagnosis
   - (d) Treatment

4. Outline and explain in general terms the treatment of a 40% burn.

Dental Oral Surgery;
Radiology

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FOURTH DENTAL YEAR

PAPER #1

DENTAL ORAL SURGERY

Marks

17 1. Discuss the treatment of odontogenic infection under the following headings:

(a) treatment directed against the bacteria causing the infection;

(b) treatment directed at the tissues in which the bacteria grow;

(c) treatment measures designed to increase the resistance of the patient.

16 2. List the types of films necessary to rule out and study possible jaw fractures. Give the reasons for requesting each different type of film.

16 3. (a) Describe fully, but concisely, the clinical appearance of a so-called "dry socket".

(b) Discuss the etiology of this condition.

(c) What is the most effective method of treating the condition?

17 4. (a) Define and differentiate the following reactions to a local anaesthetic:

(i) toxic overdose;
(ii) idiosyncrasy;
(iii) allergy;
(iv) syncope.

(b) What are the manifestations of each of the above reactions, and how should they be treated in an emergency?

(c) What precautions should be taken concerning local anaesthesia where the following conditions exist:

- (i) hyperthyroidism;
- (ii) hypertension;
- (iii) history of a heart attack which occurred 6 months ago;
- (iv) history of a heart attack which occurred 6 years ago.

RADIOLOGY IN THE PRACTICE OF DENTISTRY

(Answer any TWO questions only)

17 1. Currently there are serious differences of opinion concerning the dangers of exposing patients to X-rays for the purpose of making dental radiographs. What are the possible dangers? Evaluate them. Give an account of the procedures that you follow to reduce those dangers to the lowest reasonable amount.

17 2. RESORPTION OF THE TOOTH: What types of resorption of the teeth do you know? Give an account of their radiographic appearances.

17 3. MALIGNANT DISEASE OF THE JAWS: What radiographic appearances would lead you to suspect the presence of malignant disease in the jaws?

Orthodontics; Pedodontics; Preventive Dentistry; Dental Public Health

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FOURTH DENTAL YEAR

PAPER #4

ORTHODONTICS

Marks

16 1. A patient age 8 presents for treatment. There is a crossbite on the right side. The maxillary right deciduous cuspid, first and second deciduous molars, as well as the first permanent molars, are in linguoversion when the jaws are closed. The mandibular centre line corresponds with the maxillary centre line when the mandible is in rest position but shifts to the right 3.0 mm. when the jaws are closed. There is a 3.0 mm. space between the upper central incisors.

(a) Diagnose this case and describe a suitable treatment for the crossbite.

(b) List the possible causes of the diastema between the central incisors.

17 2. Answer in point form where possible.

(a) What methods of estimating unerupted cuspid and bicuspid widths are available? What is the relative validity of these methods?

(b) How are these methods incorporated into a complete mixed dentition analysis in the diagnosis of a lower dental arch in the mixed dentition?

(c) Children in the mixed dentition present with crowding of varying severity in the lower incisor area. Everything else is normal in the occlusion. What would you tell the parents about the future chances for the regularity or irregularity of the permanent dentition where there is a total leeway of:

- (i) 0. 0 mm.
- (ii) - 2. 0 mm.
- (iii) - 14.0 mm.
- (iv) + 4. 0 mm.

(d) Describe a treatment plan which the general practitioner might use in the case where the leeway is + 4. 0 mm.

PEDODONTICS

17 1. The examination of an 8 1/2-year-old child reveals the following:

(a) neutral occlusion in the cuspid and molar areas, and all first permanent molars and permanent central and lateral incisors fully erupted,

(b) poor oral hygiene and nutrition,

(c) lower left first deciduous molar with deep caries and a chronic sinus,

(d) lower right first deciduous molar with deep caries not involving the pulp,

(e) lower right first permanent molar with deep caries involving the pulp and with a recent history of pain,

(f) upper right first permanent molar with deep caries not involving the pulp,

(g) upper right permanent central incisor in lingual version to the lower central incisor.

Outline in point form a treatment plan for the above history.

16 2. In a child of four years of age it has been decided that the lower left second deciduous molar has to be extracted and an intra-alveolar space maintainer inserted. Omitting the waxing-up and casting, describe in point form the procedure to be followed from the examination appointment to the time when the six-year molar has erupted.

PREVENTIVE DENTISTRY

17 1. Outline in point form Miller's theory of caries production. List the present day methods of caries control.

DENTAL PUBLIC HEALTH

17 1. Outline in point form the pattern of community action in establishing a dental public health programme. Describe the role of the practising dentist in this planning and his responsibility as a professional citizen.

Periodontics; Operative Dentistry;
Endodontics

UNIVERSITY OF TORONTO
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FOURTH DENTAL YEAR

PAPER #3

PERIODONTICS

Marks

17 1. Discuss concisely influences which foods may exert on the periodontal tissues.

16 2. Outline causes and treatments of recession of the gingival tissues.

OPERATIVE DENTISTRY

16 1. (a) In order of preference and with reasons, list the filling materials you would select for an anterior restoration involving the incisal angle and also for a posterior filling involving the marginal ridge.

(b) List the causes of excessive expansion of silver amalgam in a filling restoration.

17 2. (a) Enumerate the indications for capping the pulp when it is mechanically exposed and also when it is exposed by dental caries.

(b) Calcium hydroxide is used quite extensively, either alone or in combination with other ingredients, as a pulp capping.

(1) What is the purpose in using calcium hydroxide?
(2) How does it work?

17 3. List, in sequence, the steps in making an orderly examination for a new patient prior to actual dental treatment.

ENDODONTICS

17 1. An instrument broken within the root canal, or contamination of the sterile field can have serious consequences in endodontics. Describe briefly the procedure which you would follow to avoid both of these accidents,

(a) When removing the pulp from a maxillary first bicuspid which has a pulp exposure on the buccal at the gingival;

(b) When removing the pulp from a maxillary central incisor which has a pulp exposure through a mesial or distal cavity;

(c) When removing the pulp from a mandibular central incisor in a young adult.

Prosthodontics; Dental Praxis;
Medicine

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FOURTH DENTAL YEAR

PAPER #2

PROSTHODONTICS

Marks

17 1. After the oral examination, study of the data and a complete diagnosis for a semi-edentulous patient, the next step is to prepare the mouth for a removable partial denture.

List any periodontal, surgical, operative and general treatment procedures that may have to be undertaken at this stage of treatment of the case.

17 2. In the treatment of a patient for complete denture prosthesis you are now about to record the necessary jaw relations.

The occlusion rims are prepared and ready to try in for the first time.

Describe the method of procedure leading up to and including the recording of accurate centric jaw relation.

17 3. A complete oral examination of a semi-edentulous patient reveals that there has been a loss of alveolar bone support around the remaining teeth to the extent of approximately three millimetres, but there is now no evidence of periodontal pockets.

All the maxillary teeth are in position. In the mandible the first molars are missing, and there is a mobility of plus 2 of the first and second bicuspid and the second molar teeth.

Give a concise description of:

(a) the type of replacement you would recommend;
(b) the teeth which should be used as abutments;
(c) the types of attachments indicated; and
(d) the benefit which may be expected from a periodontal standpoint.

DENTAL PRAXIS

17 1. (a) Outline the essential criteria by which patients judge a dentist's professional ability.

(b) Describe an efficient dental appointment recall system.

MEDICINE

(Answer any TWO questions only)

16 1. Discuss Pneumonia under the following headings.

(a) Causes
(b) Pathological changes in the lung
(c) Clinical manifestations
(d) Treatment

16 2. (a) Give a classification of the main types of Anemia according to cause, and give a brief account of changes in the blood in each type.

(b) Describe the treatment of TWO of the types of Anemia described above.

16 3. Discuss the possible causes, symptoms, signs, pathology and treatment of an extruded lumbar disc.

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FIRST YEAR DENTAL HYGIENE

ANATOMY, GENERAL, and HEAD & NECK

1. Describe the lungs, and name the structures entering (or leaving) the root of a lung.

2. Give a brief account of:
   (a) Maxillary Sinus
   (b) Palate
   (c) Tongue

3. Draw and label the parts of the mandible, indicating the attachments of the muscles of mastication.

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FIRST YEAR DENTAL HYGIENE

DENTAL HISTOLOGY

Marks

20 1. Define the term "mucous membrane." Describe the specific structures of the gingiva.

20 2. State the origin of the following tissues and explain how the function of each is related to its structure.
- (a) enamel
- (b) dentin
- (c) pulp
- (d) cementum

20 3. Describe the formation of enamel

20 4. Describe the tooth germ in the bell stage of development.

20 5. What are the functions of the periodontal membrane. List the tissue components related to each function.

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FIRST YEAR DENTAL HYGIENE

DENTAL PROPHYLAXIS

Mark

25 1. (a) Define periodontium.

(b) Describe with the aid of a drawing, the main components of the periodontium.

(c) Indicate on drawing:

Margin of gingiva
Base of sulcus
Epithelial attachment
Edge of alveolus
Supporting bone

10 2. By a brief outline, indicate classifications of gingivitis.

20 3. Outline the process of formation of dental calculus.

20 4. Draw and classify the types of scalers used. Indicate the usual area of application of each.

25 5. (a) What procedures are included in a complete mouth prophylaxis?

(b) Discuss briefly those which can be assigned to the Dental Hygienist.

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FIRST YEAR DENTAL HYGIENE

DENTAL RADIOGRAPHY

Marks

50 1. Discuss the chain of events required to record a shadow image on a film, radiographically, under the following headings:

(a) Production of X-rays.
(b) Penetration by X-rays.
(c) The action of the developing solution, and the effect of its chemical components on the emulsion.
(d) The action of the fixing solution, and the effect of its chemical components on the emulsion.
(e) Processing technique.

24 2. (a) Name and discuss the factors affecting the vertico-horizontal angulation.

(b) Name and discuss the factors affecting the positioning of film packets.

26 3. (a) Describe the technique for radiographing the lower cuspid region under the following headings:

(i) Purpose
(ii) Head position
(iii) Film preparation and positioning
(iv) Tube position
(v) Anatomical considerations

(b) Name three forms of distortion. Assuming the head position was correct, what correction would you make in each case?

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1958

FIRST YEAR

ENGLISH COMPOSITION

Examiners -- The Staff in English

The Minister of Education's recent announcement that commencing in September, 1958 the school year would be extended by one week throughout the Province of Ontario raises the question of whether the high school course is sufficiently difficult to provide an adequate preparation for university studies. You have now completed your freshman year at the University, and you are therefore in a position to comment on the adequacy of the preparation you received. Were you adequately prepared in all subjects? Were you adequately prepared for the methods of instruction adopted at the University? Were you prepared temperamentally for the responsibilities which a university expects a student to assume? Were you "guided" into the right course?

You are to write an essay on some aspect of this problem -- the preparation of students for university work. Set yourself a specific question (this will be the title of your essay) and present an argument which justifies an affirmative or negative answer to the question or which explains why a categorical "yes" or "no" answer cannot be given. Support your argument by evidence drawn from your own experience. Avoid easy and vague generalizations. The essay will be a successful argument if it convinces the reader that your point of view is justified.

If a number of years have intervened between your departure from high school and your entrance to the University, you may direct your attention to the particular problems which face students in this position. The essay will still take the form of an argument supporting an answer to a specific question.

The essay should extend to approximately 750 words. You have ample time to plan the essay in detail and to reread it carefully. Give special attention to paragraphing. A sound essay is a sequence of well-developed paragraphs.

English Literature.

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

Annual Examinations, 1958

FIRST YEAR

ENGLISH LITERATURE

Examiners -- The Staff in English

Answer FOUR questions, ONE from Part A, TWO from Part B, and the single question in Part C. In selecting your questions, make sure that you do not discuss the same work in more than one answer. All questions are of equal value. It is strongly suggested that 30 minutes be devoted to the planning and the re-reading of your answers.

Part A.

1. A novelist is able to interrupt his narrative in order to comment on the situation or the characters. Fielding does this frequently, Hardy occasionally, Forster rarely. Discuss the merits and the disadvantages of this practice. Refer to at least two novels.

2. Unlike the novelist, the dramatist cannot speak in his own person. However, he has other means of indicating how the action and the characters should be interpreted. Identify two different methods by which the dramatist can control the reactions of his audience. Refer to at least two plays.

3. Using Tess of the D'Urbervilles as an example, explain briefly what a novel is. Then answer the question, Is Gulliver's Travels a novel?

Part B.

4. Gulliver's Travels is divided into four books, each of the novels into a certain number of parts, phases, or sections, and each of the plays into a certain number of acts or scenes. Explain why one of the authors subdivided his work as he did.

5. In his opening scene, the dramatist normally introduces the moral problem with which his play is concerned. Discuss the opening scene of one of the four plays, showing what the problem is and how it is introduced.

6. The closing section of a novel normally represents a solution to a problem. In the light of this statement, can *Tess of the D'Urbervilles*, or *Joseph Andrews* or *A Passage to India* be considered a "normal" novel. Discuss one work only.

7. Are we justified in calling *Gulliver's Travels* a unified work of art or is it a collection of four separate books?

Part C.

8. (a) In one paragraph explain why *one* of the following poems was singled out for special attention in this course: "Prothalamion," "To His Coy Mistress," "The Rape of the Lock."

(b) Discuss the appropriateness of one of the following statements, taking care to explain clearly what you mean by the underlined adjective:

"Love Among the Ruins" is a *lyric* poem.
"The Bishop Orders His Tomb at St. Praxed's Church" is a *moral* poem.
"Lines Composed a Few Miles Above Tintern Abbey" is a *philosophic* poem.
"I Wandered Lonely as a Cloud" is a *Wordsworthian* poem.
"The Dry Salvages" is a *difficult* poem.
"The Dry Salvages" is a *Christian* poem.

Food Chemistry

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

FIRST YEAR DENTAL HYGIENE

FOOD CHEMISTRY

Examiners -- J. Scott
G. Elliott

Candidates will answer Questions 1, 2 and 3 AND any TWO of 4, 5 and 6.

1. (a) Write a short note on FIVE of the mineral elements found in foods. Discuss (i) function(s) in the body and (ii) occurrence in food products.

(b) What do we mean by:
(i) a molar solution (ii) a normal solution (iii) a %W/V solution? Tell how each would be prepared.

2. (a) How do hydrochloric and acetic acids differ in their acidic properties? How are they similar? What do we mean by the term pH? Why is it useful in food and biological chemistry? Give examples.

(b) Indicate the approximate pH values you might expect to find for (i) 0.1N HCl (ii) 0.1N acetic acid (iii) 0.1N NaOH (iv) distilled water. Tell how pH values can be determined.

3. (a) Give an example of, and formula for, each of the following substances:
(i) secondary alcohol
(ii) ester
(iii) ketone
(iv) trihydric alcohol
(v) dicarboxylic acid.

(b) Give the common name and structural formula for each of the following substances:
(i) ethanoic acid
(ii) propanone
(iii) methanol
(iv) 1, 2, 3-propane triol
(v) ethanal

4. (a) Discuss the manufacture of soap from a fat. Explain its cleansing action, including the effect of hard water. Use equations where possible.

(b) With reference to fats, define: - hydrogenation, rancidity, iodine number and acrolein formation. Use equations where possible to illustrate.

5. (a) Write a short note on classification and properties of carbohydrates.

(b) List five common food carbohydrates, describe each one briefly and tell in what foods each occurs.

6. (a) With reference to proteins explain the following terms: - amino acid, peptide bond, biuret test, D and L configuration, isoelectric point. Wherever possible use structural formula to illustrate.

(b) What are the requirements for a good dietary protein? Explain and give examples.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1958

FIRST YEAR DENTAL HYGIENE

ORAL ANATOMY

1. Enumerate the points of difference between:

   i $\overline{6}/$ and $\overline{e}/$

   ii $\underline{4}/$ and $\underline{5}/$

   iii $\underline{3}/$ and $\overline{3}/$

2. i. Define the terms variation and anomaly.
   ii. Prepare a classification of variations and anomalies.

3. i. What is meant by the term centric occlusion?
   ii. Where do the cusp tips of $/\underline{4}$ and $/\underline{6}$ meet the lower teeth in centric occlusion?

4. There are certain fundamental characteristics which are helpful in determining whether teeth belong to the primary or to the permanent dentitions. What are they?

5. i. The period of the mixed dentition occurs between the ages of _______ and _______.

   ii. The upper, permanent, anterior teeth are much wider mesiodistally than their primary antecedents. How do the permanent anteriors find space to erupt into the arch?

UNIVERSITY OF TORONTO

Division of Physical & Occupational Therapy
School of Nursing

FIRST YEAR DENTAL HYGIENE

ANNUAL EXAMINATIONS, 1958

PSYCHOLOGY 102

NO PAPER AVAILABLE

UNIVERSITY OF TORONTO
School of Nursing
Public Health Nursing: General Course
Second Year Dental Hygiene
Annual Examinations, 1957-1958

INFECTION AND IMMUNITY, 8 SECTION II

Bacteriology

1. (a) How could you demonstrate experimentally whether or not a given method for the sterilization of syringes is effective in destroying bacterial spores?

   (b) How could you be sure that spores were present before sterilization?

2. (a) Outline an experiment to determine whether bacteria from the nose and throat can pass through a gauze mask.

   (b) What factors impair the efficiency of a gauze mask in preventing the disseminating of bacteria?

3. (a) Outline an experiment to show the rate of destruction of staphylococci in gauze dressings by a given solution of disinfectant.

   (b) What factors influence the efficiency of the disinfectant?

4. (a) What pathogenic bacteria, derived from the cow, may be present in raw milk?

   (b) What additional pathogenic microorganisms may be introduced subsequently?

5. (a) How may a pure culture of haemolytic streptococci be isolated from a throat swab?

   (b) How may a pure culture of haemolytic streptococci be tested to determine whether it is potentially capable of causing human disease?

6. Outline the various steps in the isolation and identification of Salmonella typhosa.

7. (a) Outline the preparation of tuberculin.

   (b) How is tuberculin standardized to ensure uniform potency?

8. (a) How is diphtheria toxoid tested to determine whether it is adequately antigenic?

   (b) Why is dilute toxoid included as a control in the Schick test?

9. (a) How are tubercle bacilli detected by microscopic examination?

   (b) How may tubercle bacilli be isolated from sputum if not found by microscopic examination?

10. (a) What is the origin and nature of the immunizing agent used in vaccination against smallpox?

    (b) Why is an early "sensitivity" reaction not dependable evidence of immunity?

Dental Public Health

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

SECOND YEAR DENTAL HYGIENE

DENTAL PUBLIC HEALTH

Marks

20 1. Describe THREE primary principles in public health procedure.

10 2. What legislation is associated with the following:

(a) The administration of a health unit.
(b) The hospital care of mariners.
(c) Dental services to Indians.
(d) Dental services in provincial mental hospitals.
(e) Railway dental coach services in Ontario.
(f) Certification of dental hygienists.

15 3. (a) A survey of dental conditions among 100 elementary school children in each of four REMOTE Ontario areas is being planned from Toronto. There are two dental hygienists residing in each area available for one week to examine and record pertinent findings. Postal communication is good but telephone contact quite unreliable. Describe the type of dental record form you would recommend in these circumstances and the measures you would take regarding recording mistakes disclosed upon receipt of the completed forms at your central collection office in Toronto.

(b) Describe the objectives of dental inspection in Toronto elementary and secondary schools.

15 4. (a) Define and distinguish between mean, median and mode.

(b) List in sequence the headings under which you would compile a report on the dental state of school children in your home town or city.

20 5. There are dental practice procedures closely related to Dental Public Health programmes.

(a) List FOUR of these and describe very briefly the reason for their importance.

(b) What aspects of a Dental Public Health programme might be delegated to a Dental Hygienist?

20 6. It has been stated that we should never underestimate the potential contribution of voluntary agencies to public health programmes.

(a) Give FOUR reasons which substantiate this statement.

(b) Give an example of ONE such agency and state very briefly how its contribution could assist in a dental health programme.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

SECOND YEAR DENTAL HYGIENE

PATHOLOGY

1. What are odontomes? Name and describe two examples.

2. What is the difference between carcinoma and sarcoma? Give one example of each.

3. What are the appropriate names for both the benign and malignant tumours derived from the following tissues:
   (a) Stratified squamous epithelium
   (b) Fibrous connective tissue
   (c) Bone
   (d) Cartilage
   (e) Smooth muscle

4. What percentage of all deaths is caused by cancer?

5. Name and describe briefly examples of the following:
   (a) Hereditary dental anomaly
   (b) Congenital dental anomaly
   (c) Infective dental hypoplasia
   (d) Nutritional dental hypoplasia

6. In what ways may a dental pulp react to irritants of varying intensities?

7. Give a concise definition for the following terms:
   (a) Petechia
   (b) Aneurysm
   (c) Organization
   (d) Metastases
   (e) Congenital

8. List and describe briefly the various functions performed by the fluid component of an acute inflammatory exudate.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1958

SECOND YEAR DENTAL HYGIENE

PHARMACOLOGY

1. Of what value is an analeptic in dentistry? Name two and describe under what circumstances they might be used in a dental office.

2. On what basis would you choose a topical local anaesthetic for office use?

3. What is the difference between a sedative, an hypnotic, and an analgesic? Name ten drugs which possess any or all of these properties and designate which ones they do.

4. Name five drugs which are used as cold sterilizing agents for dental instruments and comment on the efficiency of each.

5. Define caustic, styptic, and astringent. Give an example of each.

6. What are the following drugs used for in dentistry:

    (1) Epinephrine
    (2) Hyoscine
    (3) Trichloroethylene
    (4) Benadryl
    (5) Calcium Carbonate

Physiology

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

SECOND YEAR DENTAL HYGIENE

PHYSIOLOGY

NOTE: Candidates shall answer any TWO from Questions 1, 2 and 3 and any TWO from Questions 4, 5 and 6. FOUR questions constitute a complete paper.

1. (a) Describe the means by which the heart rate is altered in response to changes in body activity.
   (b) Describe the coagulation of blood. Use a diagram to illustrate your points.
   (c) Write a short note on the A B blood groups.

2. Write brief notes on each of the following:
   (a) Vitamin B_{12} and Vitamin K.
   (b) The formation and functions of bile.
   (c) The measurement of B. M. R.
   (d) The plasma proteins.

3. (a) Describe the factors which control pancreatic secretion.
   (b) List the enzymes of pancreatic juice and outline the function of each.
   (c) Write a note on the absorption of material from the alimentary tract.

4. (a) Discuss the pressure changes which occur within the lungs and within the pleural cavity during inspiration and expiration.
   (b) Outline how you would estimate the following:
      i) inspiratory reserve
      ii) expiratory reserve
      iii) vital capacity
      Give approximate normal resting values for the above.
   (c) What is meant by cyanosis? In what types of anoxia is it seen?

5. (a) Discuss the role of the adrenal cortex in the reabsorption process in the kidney.

(b) What is meant by a Clearance Test? What substances could be used for such tests and what information could be obtained from such tests?

(c) What is meant by the term diuresis? How could such a process be brought about?

6. (a) Outline the symptoms of overactivity of the thyroid gland.

(b) Discuss the physiological importance of progesterone.

(c) Outline the symptoms of oversecretion of growth hormone.

(d) Discuss tetany and explain the relationship of parathormone to tetany.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, 1958

SECOND YEAR DENTAL HYGIENE

PREVENTIVE DENTISTRY

1. The recommendations outlined in Canada's Food Rules have intentionally been made flexible. Discuss the practical importance of this flexibility.

2. (a) Discuss at least two effective methods of appraising diets and state which you would prefer to use in patient counselling, giving reasons.

(b) Describe fully the procedure followed in giving diet instruction to a young patient.

3. Discuss fully one method that might be used for caries control in a group of primary school children.

4. Would a Space Maintainer be indicated or contraindicated in the following circumstances and give the reasons for your answers.

(a) Maxillary second deciduous molar is lost at the age of 11.
(b) Mandibular first deciduous molar is lost at the age of 4.
(c) Maxillary deciduous anteriors are lost at the age of 3 due to an accident.

5. (a) Name the three divisions of Angle's classification of malocclusion with a brief description of each.

(b) State the three basic objectives of Orthodontic treatment.

Sociology

UNIVERSITY OF TORONTO
FACULTY OF ARTS

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ANNUAL EXAMINATIONS, 1958

First Year

SOCIOLOGY 1a

Examiners—The Staff in Sociology

Candidates will answer FOUR (4) questions, at least ONE from each part. (If you wish you may limit your paper to THREE (3) questions, but if so, you must answer questions 3, 6 and *either* 9 *or* 10).

Part A

1. "Thus collective action requires both a set of norms and a system of statuses."

(*a*) Explain and illustrate with a specific instance of collective activity.

(*b*) How does this particular activity persist through time?

2. (*a*) How would you distinguish between formal and informal organization? Illustrate.

(*b*) In what sense can an office be said to be both personal and impersonal?

3. Suppose you are making a sociological study of a formal organization.

(*a*) What use would you make of its constitution and organization chart?

(*b*) What limitations might you expect this data to have?

(*c*) What other data would you seek?

Illustrate where possible.

Part B

4. "The sociologist stands in a peculiar relationship to his material, a relationship from whose constraints the astronomer, the physicist, the chemist and the biologist are relatively free."

Explain and illustrate.

5. "Biological factors are necessary, but not sufficient, to explain the family. Though rooted in the sexual character of the species, the family is a social and cultural phenomenon."

Explain and illustrate.

6. "Society destroys mankind's natural liberties and behaviour and substitutes for them unnatural rules and conventions."

Do you agree? Cite evidence to support your position.

Part C

7. "Friction, tension and confusion are signs of a change in the existing pattern of race and ethnic relations."

Do you agree? Why or why not? Illustrate your answer.

8. How would you proceed if asked to report on the position and prospects of a specific immigrant group in Toronto?

9. "The only way to eradicate prejudice is to eliminate at the same time group loyalty, group pride and patriotism."

Do you agree? Why or why not? Do you regard racial and ethnic antagonism as inevitable? Explain your position.

10. "Thus a class system tends both to stimulate and to restrain social mobility."

How would you explain this apparent paradox? Illustrate.

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